Richard Schatz

List of Publications by Year
in descending order

144 papers	2,059 citations	279798 23 h-index	315739 38 g-index
144 all docs	144 docs citations	144 times ranked	1355 citing authors

#	Article	IF	Citations
1	Direct Modulation and Free-Space Transmissions of up to 6 Gbps Multilevel Signals With a 4.65-mum Quantum Cascade Laser at Room Temperature. Journal of Lightwave Technology, 2022, 40, 2370-2377.	4.6	16
2	Bridging the Terahertz Gap: Photonics-Assisted Free-Space Communications From the Submillimeter-Wave to the Mid-Infrared. Journal of Lightwave Technology, 2022, 40, 3149-3162.	4.6	33
3	Optical Amplification-Free 200 Gbaud On-Off Keying Link for Intra-Data Center Communications. , 2022, , .		11
4	Feedforward Neural Network-Based EVM Estimation: Impairment Tolerance in Coherent Optical Systems. IEEE Journal of Selected Topics in Quantum Electronics, 2022, 28, 1-10.	2.9	8
5	Low-chirp isolator-free 65-GHz-bandwidth directly modulated lasers. Nature Photonics, 2021, 15, 59-63.	31.4	100
6	Freeâ€Space Communications Enabled by Quantum Cascade Lasers. Physica Status Solidi (A) Applications and Materials Science, 2021, 218, 2000407.	1.8	48
7	Deep Learning Assisted Pre-Carrier Phase Recovery EVM Estimation for Coherent Transmission Systems. , 2021, , .		2
8	200-Gb/s Direct Modulation of a 50-GHz Class Laser With Advanced Digital Modulations. Journal of Lightwave Technology, 2021, 39, 845-852.	4.6	10
9	100 Gbaud Onâ€“Off Keying/Pulse Amplitude Modulation Links in C-Band for Short-Reach Optical Interconnects. Applied Sciences (Switzerland), 2021, 11, 4284.	2.5	3
10	Experimental validation of CNNs versus FFNNs for time- and energy-efficient EVM estimation in coherent optical systems. Journal of Optical Communications and Networking, 2021, 13, E63.	4.8	4
11	Short Reach Communication Technologies for Client-Side Optics Beyond 400 Gbps. IEEE Photonics Technology Letters, 2021, 33, 1046-1049.	2.5	8
12	Long-Term Reliable >200-Gb/s Directly Modulated Lasers with 800GbE-Compliant DSP. , 2021, , .		12
13	Laser Linewidth Tolerant EVM Estimation Approach for Intelligent Signal Quality Monitoring Relying on Feedforward Neural Networks. , 2021, , .		3
14	200 Gbps/Lane IM/DD Technologies for Short Reach Optical Interconnects. Journal of Lightwave Technology, 2020, 38, 492-503.	4.6	117
15	Coupled-Cavity VCSEL with an Integrated Electro-Absorption Modulator: Small- and Large-Signal Modulation Analysis. Applied Sciences (Switzerland), 2020, 10, 6128.	2.5	3
16	Kernel Affine Projection for Nonlinearity Tolerant Optical Short Reach Systems. IEEE Transactions on Communications, 2020, 68, 6403-6412.	7.8	5
17	Unrepeatered 240-km 64-QAM Transmission Using Distributed Raman Amplification over SMF Fiber. Applied Sciences (Switzerland), 2020, 10, 1433.	2.5	5
18	50-GHz Repetition Gain Switching Using a Cavity-Enhanced DFB Laser Assisted by Optical Injection Locking. Journal of Lightwave Technology, 2020, 38, 1844-1850.	4.6	13

#	Article	IF	Citations
19	Towards 1.6T datacentre interconnect technologies: the TWILIGHT perspective. JPhys Photonics, 2020, 2, 041002.	4.6	2
20	400-Gb/s direct modulation using a DFB+R laser. Optics Letters, 2020, 45, 3337.	3.3	14
21	Isolator-free > 67-GHz bandwidth DFB+R laser with suppressed chirp. , 2020, , .		14
22	300+ Gbps Short-Reach Optical Communications. , 2020, , .		1
23	High-Speed Short Reach Optical Communications: Technological Options and Challenges. , 2020, , .		1
24	Nonlinearity Tolerant High-Speed DMT Transmission With 1.5-<italic>Î¼</italic>m Single-Mode VCSEL and Multi-Core Fibers for Optical Interconnects. Journal of Lightwave Technology, 2019, 37, 380-388.	4.6	14
25	Toward Terabit Digital Radio over Fiber Systems: Architecture and Key Technologies. IEEE Communications Magazine, 2019, 57, 131-137.	6.1	32
26	100 Gbaud PAM4 link without EDFA and post-equalization for optical interconnects. , 2019, , .		6
27	High-Speed PAM4-Based Optical SDM Interconnects With Directly Modulated Long-Wavelength VCSEL. Journal of Lightwave Technology, 2019, 37, 356-362.	4.6	19
28	Beyond 200 Gbps per Lane Intensity Modulation Direct Detection (IM/DD) Transmissions for Optical Interconnects: Challenges and Recent Developments. , 2019, , .		14
29	Thermal Reflow Engineered Cylindrical Polymer Waveguides for Optical Interconnects. IEEE Photonics Technology Letters, 2018, 30, 447-450.	2.5	4
30	Spatial division multiplexing for optical data center networks. , 2018, , .		2
31	Real-time 100 Gbps/Î»/core NRZ and EDB IM/DD transmission over multicore fiber for intra-datacenter communication networks. Optics Express, 2018, 26, 10519.	3.4	31
32	Nonlinearity-aware 200â€‰â€‰Gbit/s DMT transmission for C-band short-reach optical interconnects with a single packaged electro-absorption modulated laser. Optics Letters, 2018, 43, 182.	3.3	42
33	MCF-Enabled Self-Homodyne 16/64QAM Transmission for SDM Optical Access Networks. , 2018, , .		4
34	100 GHz Externally Modulated Laser for Optical Interconnects. Journal of Lightwave Technology, 2017, 35, 1174-1179.	4.6	64
35	55 GHz Bandwidth Distributed Reflector Laser. Journal of Lightwave Technology, 2017, 35, 397-403.	4.6	62
36	Analysis of Spectral and Energy Efficiency Tradeoff in Single-Line Rate WDM Links. Journal of Lightwave Technology, 2017, 35, 1847-1857.	4.6	10

#	Article	IF	Citations
37	Real-Time 100 Gb/s Transmission Using Three-Level Electrical Duobinary Modulation for Short-Reach Optical Interconnects. Journal of Lightwave Technology, 2017, 35, 1313-1319.	4.6	18
38	Experimental Study of 1.55- mu m EML-Based Optical IM/DD PAM-4/8 Short Reach Systems. IEEE Photonics Technology Letters, 2017, 29, 523-526.	2.5	19
39	Laser Frequency Noise in Coherent Optical Systems: Spectral Regimes and Impairments. Scientific Reports, 2017, 7, 844.	3.3	23
40	100 Gbaud 4PAM Link for High Speed Optical Interconnects. , 2017, , .		15
41	Blind Phase Search with Angular Quantization Noise Mitigation for Efficient Carrier Phase Recovery. Photonics, 2017, 4, 37.	2.0	7
42	Experimental Evaluation of Impairments in Unrepeatered DP-16QAM Link with Distributed Raman Amplification. Photonics, 2017, 4, 16.	2.0	0
43	Effective Linewidth of Semiconductor Lasers for Coherent Optical Data Links. Photonics, 2016, 3, 39.	2.0	6
44	Equalization Enhanced Phase Noise in Coherent Optical Systems with Digital Pre- and Post-Processing. Photonics, 2016, 3, 12.	2.0	4
45	Carrier Phase Recovery Algorithms for Coherent Optical Circular mQAM Systems. Journal of Lightwave Technology, 2016, 34, 2717-2723.	4.6	16
46	55-GHz Bandwidth Short-Cavity Distributed Reflector Laser and its Application to 112-Gb/s PAM-4. , 2016, , .		45
47	Performance Evaluation of PAM and DMT for Short-range Optical Transmission with High Speed InGaAsP DFB-TWEAM. , 2016, , .		2
48	Rate Equation-Based Phase Recovery for Semiconductor Laser Coherent Transmitters. , 2015, , .		3
49	Field trial over 820 km installed SSMF and its potential Terabit/s superchannel application with up to 57.5-Gbaud DP-QPSK transmission. Optics Communications, 2015, 353, 133-138.	2.1	18
50	Adaptive Boundaries Scheme for Cycle-Slip Mitigation in C-mQAM Coherent Systems. IEEE Photonics Technology Letters, 2015, 27, 2154-2157.	2.5	3
51	Laser Rate Equation-Based Filtering for Carrier Recovery in Characterization and Communication. Journal of Lightwave Technology, 2015, 33, 3271-3279.	4.6	12
52	A path to use large linewidth LO in 28 Gbd 16-QAM metro links. , 2015, , .		4
53	Digital signal processing approaches for semiconductor phase noise tolerant coherent transmission systems. Proceedings of SPIE, 2015, , .	0.8	1
54	Comprehensive Study of Equalization-Enhanced Phase Noise in Coherent Optical Systems. Journal of Lightwave Technology, 2015, 33, 4834-4841.	4.6	39

#	Article	IF	Citations
55	Power efficiency of WDM networks using various modulation formats with spectral efficiency limited by linear crosstalk. Optics Communications, 2014, 318, 31-36.	2.1	16
56	Spectral and energy efficiency considerations in mixed-line rate WDM networks with signal quality guarantee. , 2013, , .		12
57	Quasi Real-Time 230-Gbit/s Coherent Transmission Field Trial over 820 km SSMF Using 57.5-Gbaud Dual-Polarization QPSK. , 2013, , .		2
58	Fabrication of an electro-absorption transceiver with a monolithically integrated optical amplifier for fiber transmission of 40â€“60 GHz radio signals. Semiconductor Science and Technology, 2011, 26, 014042.	2.0	5
59	Impact of Losses in the Bragg Section on the Dynamics of Detuned Loaded DBR Lasers. IEEE Journal of Quantum Electronics, 2010, 46, 1360-1367.	1.9	31
60	Modulation and chirp evaluation of 100 GHz DFB-TWEAM. , 2010, , .		5
61	Generation of RZ-AMI using a Widely Tuneable Modulated Grating Y-Branch Chirp Managed Laser. , 2010, , .		2
62	Dynamic properties of electrically pâ€“n confined, epitaxially regrown 1.27â€…Âµm InGaAs single-mode vertical-cavity surface-emitting lasers. IET Optoelectronics, 2009, 3, 163-167.	3.3	0
63	Experimental characterization of high-speed 155 Î¼m buried heterostructure InGaAsP/InGaAlAs quantum-well lasers. Journal of the Optical Society of America B: Optical Physics, 2009, 26, 318.	2.1	9
64	Monolithically Integrated 100 GHz DFB-TWEAM. Journal of Lightwave Technology, 2009, 27, 3410-3415.	4.6	63
65	Extension of 40 Gbps link with a directly detected 2.5 Gbps subcarrier channel. , 2009, , .		0
66	Recent developments in high-speed optical modulators. , 2008, , 183-220.		6
67	400km transmission of STM-16 data on baseband and DVBT on 40GHz subcarrier. , 2008, , .		2
68	Reduction of Dispersion Induced Distortions in Radio over Fibre links. , 2008, , .		2
69	50 Gb/s Modulation and/or Detection with a Travelling-Wave Electro-Absorption Transceiver. , 2008, , .		6
70	Effects of detuned loading on the modulation performance of widely tunable MG-Y lasers. , 2008, , .		1
71	<title>Silicon optical bench for flip-chip integration of high speed widely tunable lasers</title>. Proceedings of SPIE, 2008, , .	0.8	0
72	Round-Robin Measurements of Linewidth Enhancement Factor of Semiconductor Lasers in COST 288 Action. , 2007, , .		2

#	Article	IF	Citations
73	Linewidth Enhancement Factor of Semiconductor Lasers: Results from Round-Robin Measurements in COST 288. , 2007, , .		8
74	Full-Duplex DOCSIS/WirelessDOCSIS Fiberâ€"Radio Network Employing Packaged AFPMs as Optical/Electrical Transducers. Journal of Lightwave Technology, 2007, 25, 673-684.	4.6	10
75	Widely Tunable Wavelength Conversion 10 Gb/s Using a Modulated Grating Y-branch Laser Integrated with an Optical Amplifier. , 2007, , .		2
76	Temperature insensitive 1.3â€…[micro sign]m InGaAsâˆ•GaAs quantum dot distributed feedback lasers for 10â€…Gbitâˆ•s transmission over 21â€…km. Electronics Letters, 2006, 42, 1457.	1.0	29
77	Experimental Demonstration of Full-Duplex DOCSIS Signal Transmissions over a Wireline/Wireless-Fibre Access Network. , 2006, , .		0
78	High-Speed Performance of 1.55 Â¿m Buried Hetero-Structure Lasers with 20 InGaAsP/InGaAlAs Quantum-Wells. , 2006, , .		2
79	The Effect of Barrier Composition on the Vertical Carrier Transport and Lasing Properties of 1.55-<tex>$mu hbox m$</tex>Multiple Quantum-Well Structures. IEEE Journal of Quantum Electronics, 2006, 42, 713-724.	1.9	8
80	Full-duplex DOCSIS/WirelessDOCSIS fiber-radio network employing packaged AFPM-based base-stations. IEEE Photonics Technology Letters, 2006, 18, 406-408.	2.5	16
81	Enhanced linear dynamic range of asymmetric Fabry-Pe/spl acute/rot modulator/detector. IEEE Photonics Technology Letters, 2006, 18, 770-772.	2.5	5
82	Enhanced linear dynamic range of asymmetric Fabry-Pe/spl acute/rot modulator/detector. IEEE Photonics Technology Letters, 2006, 18, 1040-1042.	2.5	2
83	Low-cost packaging of a reflective electroabsorption modulator/detector with optimized spurious free dynamic range. , 2006, , .		0
84	Intermodulation Distortion Suppression in a Full-Duplex Radio-over-Fibre System Employing Asymmetric Fabry-Perot Modulator/Detector. , 2006, , .		0
85	High-speed direct Modulation of widely tunable MG-Y laser. IEEE Photonics Technology Letters, 2005, 17, 1157-1159.	2.5	15
86	Single-mode 1.27Î¼m InGaAs vertical cavity surface-emitting lasers with temperature-tolerant modulation characteristics. Applied Physics Letters, 2005, 86, 211109.	3.3	4
87	High-Speed 1.56-μm Multiple Quantum Well Asymmetric Fabry-Perot Modulator/Detector (AFPMD) for Radio-Over-Fibre Applications. , 2005, , .		9
88	10 Gb/s direct modulation of 40 nm tunable modulated-grating Y-branch laser. , 2005, , .		1
89	High-frequency analog modulation of oxide confined 670-nm vertical-cavity surface-emitting lasers. Optical Engineering, 2004, 43, 3138.	1.0	1
90	Design optimization of InGaAsPâ€"InGaAlAs 1.55 Âµm strain-compensated MQW lasers for direct modulation applications. Semiconductor Science and Technology, 2004, 19, 615-625.	2.0	25

#	Article	IF	Citations
91	Influence of Electrical Parasitics and Drive Impedance on the Laser Modulation Response. IEEE Photonics Technology Letters, 2004, 16, 21-23.	2.5	4
92	Temperature sensitivity of the threshold current of long-wavelength InGaAs-GaAs VCSELs with large gain-cavity detuning. IEEE Journal of Quantum Electronics, 2004, 40, 453-462.	1.9	49
93	<title>The influence of gain nonlinearities on distortion in semiconductor lasers</title>. , 2004, , .		0
94	Modeling spatial hole burning and mode competition in index-guided VCSELs. , 2003, , .		7
95	Properties of highly strained InGaAs/GaAs quantum wells for 1.2-Î¼m laser diodes. Applied Physics Letters, 2002, 81, 2334-2336.	3.3	33
96	Analog modulation properties of oxide confined VCSELs at microwave frequencies. Journal of Lightwave Technology, 2002, 20, 1740-1749.	4.6	67
97	Design of inductive p-i-n diode matching for optical receivers with increased bit-rate operation. Journal of Lightwave Technology, 2001, 19, 1956-1963.	4.6	15
98	Quest for very high speed VCSELs: pitfalls and clues. , 2001, , .		8
99	Selectively oxidized vertical-cavity surface-emitting lasers for high-speed data communication. , 2001, 4286, 96.		0
100	<title>High-speed visible VCSEL for POF data links</title>. , 2000, 3946, 88.		3
101	Extended modulation bandwidth of DBR and external cavity lasers by utilizing a cavity resonance for equalization. IEEE Journal of Quantum Electronics, 2000, 36, 1468-1475.	1.9	79
102	Bandwidth enhancement and chirp reduction in DBR lasers by strong optical injection. , 2000, , .		7
103	Parameter extraction. , 1999, , 235-268.		0
104	Evaluation of an automatic method to extract the grating coupling coefficient in different types of fabricated DFB lasers. IEEE Journal of Quantum Electronics, 1998, 34, 141-146.	1.9	8
105	Relative intensity noise and linewidth measurements of a widely tunable GCSR laser. IEEE Photonics Technology Letters, 1998, 10, 481-483.	2.5	11
106	Amplitude and frequency modulation characteristics of widely tunable GCSR lasers. IEEE Photonics Technology Letters, 1998, 10, 1383-1385.	2.5	7
107	Modulation and noise measurements from 1520 to 1560 nm in monolithic widely tunable semiconductor lasers. , 1998, , .		1
108	Measurement and parameter extraction of semiconductor lasers: experiences of the pan-European action COST 240. , 1998, 3415, 152.		0

#	Article	IF	Citations
109	24-GHz modulation bandwidth and passive alignment of flip-chip mounted DFB laser diodes. IEEE Photonics Technology Letters, 1997, 9, 306-308.	2.5	26
110	30 GHz direct modulation bandwidth in detuned loaded InGaAsP DBR lasers at 1.55 [micro sign]m wavelength. Electronics Letters, 1997, 33, 488.	1.0	110
111	A correct single-mode photon rate equation for multisection lasers. IEEE Photonics Technology Letters, 1996, 8, 614-616.	2.5	18
112	<title>Modulation response measurements and evaluation of MQW InGaAsP lasers of various designs</title>. , 1996, 2684, 138.		35
113	Improved spectral characteristics of MQW-DFB lasers by incorporation of multiple phase-shifts. Journal of Lightwave Technology, 1995, 13, 434-441.	4.6	12
114	Dynamics of spatial hole burning effects in DFB lasers. IEEE Journal of Quantum Electronics, 1995, 31, 1981-1993.	1.9	32
115	Steady state model for facet heating leading to thermal runaway in semiconductor lasers. Journal of Applied Physics, 1994, 76, 2509-2521.	2.5	63
116	Parameter extraction from DFB lasers by means of a simple expression for the spontaneous emission spectrum. IEEE Photonics Technology Letters, 1994, 6, 1182-1184.	2.5	21
117	On the modulation bandwidth of semiconductor microcavity lasers. IEEE Photonics Technology Letters, 1994, 6, 1312-1314.	2.5	4
118	DFB laser with nonuniform coupling coefficient realized by double-layer buried grating. IEEE Photonics Technology Letters, 1993, 5, 1128-1131.	2.5	12
119	Investigation on the spectral characteristics of DFB lasers with different grating configurations made by electron-beam lithography. Journal of Lightwave Technology, 1993, 11, 1405-1415.	4.6	23
120	Correlation measurements of intensity noise from the two facets of DFB lasers during linewidth rebroadening. Electronics Letters, 1992, 28, 1542.	1.0	2
121	Effect of stitching errors on the performance of DFB lasers fabricated using e-beam lithography (Poster Paper). , 1992, , .		0
122	Longitudinal spatial instability in symmetric semiconductor lasers due to spatial hole burning. IEEE Journal of Quantum Electronics, 1992, 28, 1443-1449.	1.9	52
123	The effect of stitching errors on the spectral characteristics of DFB lasers fabricated using electron beam lithography. Journal of Lightwave Technology, 1992, 10, 1256-1266.	4.6	26
124	Broadband measurements of frequency noise spectrum in two section DBR laser. Electronics Letters, 1991, 27, 289.	1.0	4
125	Pure frequency modulation or intensity modulation with suppressed frequency chirp using active Bragg reflector integrated laser. Electronics Letters, 1989, 25, 304.	1.0	7
126	Measurement of a VPE-transported DFB laser with blue-shifted frequency modulation response from DC to 2 GHz. Electronics Letters, 1988, 24, 746.	1.0	9

#	Article	IF	Citations
127	Two-section InGaAsP DBR-lasers at 1.55 Î¼m wavelength with 31 GHz direct modulation bandwidth. , 0, , .		4
128	Cross-correlation measurements of intensity noise from the two facets of DFB lasers during linewidth rebroadening. , 0, , .		0
129	Enhanced modulation bandwidth and self-pulsations in detuned loaded InGaAsP DBR-lasers. , 0, , .		4
130	Extraction of a large set of laser parameters from different measurements. , 0, , .		1
131	Measurement of amplitude and frequency modulation responses of widely tunable GCSR lasers. , 0, , .		0
132	High speed modulation characteristics of long wavelength vertical cavity lasers based on an integrated InP Bragg reflector. , 0, , .		2
133	20 GHz bandwidth of lasers flip-chip-mounted on microstructured carriers with integrated electrical waveguides. , 0, , .		1
134	Enhanced direct modulation efficiency by FM to IM conversion. , 0, , .		1
135	High-performance 1.2-Î¼m highly strained InGaAs/GaAs quantum well lasers. , 0, , .		0
136	Impact of spatial hole burning on modulation response of vertical cavity surface emitting lasers. , 0, , .		4
137	III-V materials growth by hydride VPE for high frequency optoelectronic devices. , 0, , .		0
138	Influence of gain nonlinearity on the second order harmonic distortion in semiconductor lasers. , 0, , .		0
139	40 Gb/s transmission experiment using directly modulated 1.55 Î¼m DBR lasers. , 0, , .		10
140	Design and evaluation of high speed DBR lasers for analog and digital transmission. , 0, , .		2
141	Design optimization of InGaAsP-InAlAs/ 1.55 Î¼m strain-compensated MQW lasers for direct modulation applications. , 0, , .		0
142	Detuned-loading effects on directly-modulated high-speed lasers. , 0, , .		2
143	A silicon optical bench for flip chip mounting of widely tunable modulated grating Y-branch lasers. , 0, , .		0
144	GaAs/AlGaAs buried-heterostructure laser diodes with semi-insulating GaInP:Fe regrowth. , 0, , .		0